

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 July 2001 (12.07.2001)

PCT

(10) International Publication Number
WO 01/50227 A2

- (51) International Patent Classification⁷: G06F
- (21) International Application Number: PCT/US00/41529
- (22) International Filing Date: 25 October 2000 (25.10.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/161,257 25 October 1999 (25.10.1999) US
- (71) Applicant: ASCOM HASLER MAILING SYSTEMS, INC. [US/US]; 19 Forest Parkway, Shelton, CT 06484-0903 (US).
- (72) Inventors: MATTERN, James, M.; 755 South Brookskvale Road, Cheshire, CT 06410 (US). DUTTA,

Rana; 367 Waverly Road, Shelton, CT 06484 (US). RICHARDSON, Mark, L.; 255 North Mayflower Avenue, Monrovia, CA 91016 (US).

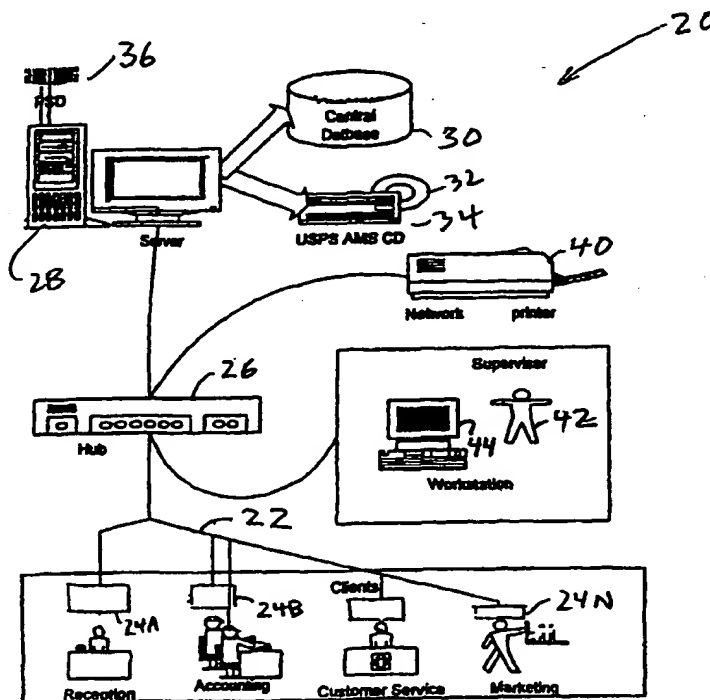
(74) Agent: GREEN, Clarence, A.; Perman & Green, LLP, 425 Post Road, Fairfield, CT 06430 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

[Continued on next page]

(54) Title: NETWORK BASED INDICIA GENERATING SYSTEM AND METHOD



(57) Abstract: A system and a method for managing generation of indicia representing payments for a plurality of users. The system comprises a secure source of funds, an output station, at least one user workstation, each user workstation including user software for enabling the user to provide input

[Continued on next page]

BEST AVAILABLE COPY



IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *Without international search report and to be republished upon receipt of that report.*

data corresponding to indicia to be generated, a centralized software system for interacting with the user software, the secure source of funds, and the output station, and a network for carrying information between the at least one workstation and the centralized software system, and between the centralized software system, the secure source of funds and the output station. The system may also include a charge back accounting system for charging back funds expended, to a user of the system. The indicia may be postal indicia, and the system may further include apparatus for assembly of postal packages, and a printer for printing the postal indicia for inclusion with the packages. A method implemented by the system. An integrated system including a customer interface for receiving orders for at least one of a plurality of items to be sent to a customer; an assembly apparatus for assembly of the items ordered by the customer into a package to be sent to the customer by a carrier; and a franking apparatus for franking or metering the items to be sent to the customer.

NETWORK BASED INDICIA GENERATING SYSTEM AND METHOD

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to systems and methods for making payments electronically. More particularly, it relates to systems and methods for securely generating items evidencing economic value. More particularly still, it relates to a flexible, network based system for generating postal indicia.

2. Prior Art

Various stand alone mail metering or franking systems are known. Smaller businesses not having a great deal of mail can purchase or lease systems that weigh individual pieces of mail and then print out appropriate postage.

A problem associated with such small systems is that they are not suitable for large enterprises where thousands of pieces of mail must be handled daily. Further, such small systems do not provide address standardization and presorting of mail, which are necessary to take advantage of postal discount rates. Using such small systems in a large business would require an enormous amount of time and labor.

There are a variety of large scale systems available for the processing of large volumes of mail. Generally, these are located at a single location in a business. The mail must be collected and moved to that location, generally a mailroom, where it all must be processed. Very often, it is all delivered to the mailroom at one time of the day, and a huge amount of work must be done in a very short period of time to process the mail and deliver it to the post office. Further, these systems do not readily lend themselves to charge back accounting to the various users who have had their mail franked. There is simply no good way to track costs for individuals or departments of a company.

There are also a number of systems available that assemble packages to be mailed. Inserts to be placed in an envelope may be folded, collated and inserted into the envelope. Some of these systems may even address the envelopes. However, there is no system available that performs all of these functions and also meters or franks the mail. Further, there is no system that efficiently accepts customer requests for a plurality of items to be mailed, assembles the item, and automatically franks the resulting mail.

SUMMARY OF THE INVENTION

It is an object of the invention to provide a system for handling mail that has the functions and advantages of larger systems, but can also be used to advantage by a number of individual users who do not necessarily each need to do a great deal of mailing.

It is another object of the invention to provide a system which efficiently enables charge back accounting for use made of the system, and in particular for funds expended.

It is yet another object of the invention to enable users at a plurality of locations to make use of the system.

It is still another object of the invention to provide a single system, which has all of the functions necessary to collate, fold, assemble and insert into an envelope items to be mailed, and address and to frank the assembled envelopes, including an item or items requested by a customer.

In accordance with the invention a system for managing generation of indicia representing payments for a plurality of users comprises a secure source of funds, an output station, at least one user workstation, each user workstation including user software for enabling the user to provide input data corresponding to indicia to be generated, a centralized software system for interacting with the user software, the secure source of funds, and the output station, and a network for carrying information between the at least one workstation and the centralized software system, and between said centralized software system, the secure source of funds and the output station.

The system may further comprise for at least one of the workstations a local secure source of funds and a local output station for locally generating the indicia. The local output station may include at least one of a printer, a fax, a modem and an e-mail generator.

Preferably the indicia are postal indicia and the secure source of funds is a PSD. At least one of the

workstations may be a local workstation and may include a local dongle in the form of hardware device or software. The output station of the system and the source of funds may be centralized. The system may further comprise a charge back accounting system for charging back funds expended, to a user of the system. The system may further comprise apparatus for assembly of postal packages, wherein the output station includes a printer for printing postal indicia for inclusion with the packages.

The invention also is directed to a system comprising a customer interface for receiving orders for at least one of a plurality of items to be sent to a customer; an assembly apparatus for assembly of the items ordered by the customer into a package to be sent to the customer by a carrier; and a franking apparatus for franking the items to be sent to the customer; the customer interface, the assembly apparatus and the franking apparatus all being contained in a single integrated system. The customer interface may connect to customers via the Internet. Alternatively a computer with a graphical user interface, may be used for entering customer orders.

The invention is also directed to a method for managing generation of indicia representing payments for a plurality of users. The method comprises entering data into at least one user workstation, the data corresponding to indicia to be generated; accessing a secure source of funds; utilizing a centralized software system for interacting with said secure source of funds; sending data through a network for carrying information between the at least one workstation, the centralized software system, and the secure source of funds; and

providing data needed to generate the indicia to an output station. The method may further comprise generating one of a printout, a fax, a modem, an infrared or RF signal, or an e-mail at the output station.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing aspects and other features of the present invention are explained in the following description, taken in connection with the accompanying drawings, wherein:

Fig. 1 is a system diagram of a first embodiment of the invention.

Fig. 1A is a variation of the embodiment of the invention illustrated in Fig. 1.

Fig. 2 is a variation of the embodiment of the invention illustrated in Fig. 1A.

Fig. 3 is a functional block diagram of the software and databases associated with the embodiment of the invention illustrated in Fig. 2.

Fig. 4 is a system diagram of another embodiment of the invention.

Fig. 5 is a system diagram of a further embodiment of the invention.

Fig. 6 is a system diagram of yet another embodiment of the invention.

Fig. 7 is a system diagram of an embodiment of the invention suitable for use on the Internet.

Fig. 8 is a functional block diagram of the software and databases associated with the embodiment of the invention illustrated in Fig. 7.

Fig. 9 is a high level diagram of a software system arrangement, which combines the features of embodiments such as those illustrated in Figs. 1, 1A, 2 and 3 with those of Figs. 7 and 8.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The invention is directed broadly to a system and method for managing the providing of indicia representing economic value securely with an electronic signature, by a plurality of users, using a security device to insure the security of funds deposited with the system and the authenticity of the indicia. In this respect reference is made to United States Patent Application Serial No. 09/668,180 filed on September 18, 2000 and entitled "Payment System and Method" and assigned to the assignee of the present invention corresponding to International Patent Application, PCT/US00/25522 the teachings of which are hereby incorporated by reference. An exemplary embodiment of the invention, directed to a mailing system is illustrated in Fig. 1.

Referring to Fig. 1, a system 20 in accordance with a first embodiment of the invention includes a local area network or LAN 22 for connecting a plurality of user workstations 24A, 24B...24N to a centralized system including a LAN hub 26. The workstation 24A, 24B...24N may be stations where mail is generated by different departments within, for example, a business, etc. These departments may be reception, accounting, customer service, marketing, etc. The workstations 24A, 24B...24N

are clients of a server 28, which may be, for example a Windows NT® server. The server 28 has associated with it, a central database 30, which may contain a variety of information, including address information for customers, vendors, consultants or others having a relationship with the business that uses system 20, who must, at least on occasion, receive mail from the business.

Server 28 may run software such as a United States Postal Service address matching system (AMS) program, which does address standardization. The program may be on, for example, a compact disc 32, read by an input device 34 such as a CD drive of a type well known in the art. A device for storing the value of funds transferred into the system such as a SAFE or a postal security device or PSD 36 is connected to server 28. Funds may be transferred into PSD 36 by a telemetering system or TMS (not shown in Fig. 1) in a manner well known in the art.

When users at workstation 24A, 24B...24N desire to print postage, the appropriate value of the postage is subtracted from PSD 36, and a digital data stream is sent to, for example, a network or central printer 40, where, for example, envelopes may be addressed and appropriate postage indicia printed on the envelopes (not shown in Fig. 1). The printing of postal indicia may be based on, for example, the United States Postal Service Information-Based Indicia Program (IBIP).

System 20 is under the control of a system supervisor 42, who may be, for example, an information technology specialist at a supervisor's workstation 44 connected to server 38 through hub 26.

Workstation 44 may run software including a supervisor application that has all the administrative tasks such as administration of database 30, assigning user options, and maintenance of the PSD 36. The software running on user workstations 24A, 24B...24N is split into two applications, the first is an executable that is run from the desktop environment and the second is browser based with native support for an Internet browser, such as for example, Internet Explorer™, Netscape Navigator™, etc. allowing this application to function within a company's Intranet, Internet or Extranet, that may be accessible on LAN 22 or a wide area network (WAN). Various forms of active document support may be loaded in the browser to support, for example, Visio, Corel, Acrobat, etc.

Referring to Fig. 1A, a variation of the system of Fig. 1 is illustrated. The system is functionally identical to that of Fig. 1, but there is no separate hub 26, its function being included in the arrangement of the server 28.

Referring to Fig. 2, a system arrangement similar to that of Fig. 1A is illustrated. The principal difference between the arrangement of Fig. 2 and that of Fig. 1A is that in Fig. 2, at least one workstation 24N, may have associated with it a local PSD 36N and local printer 40N. Each end user may thus charge its respective local PSD or the centralized PSD 36 for the value of the indicia, which are printed by either the local printer 40N or the centralized printer 40. In addition, it is possible that some users do not have a local PSD, but instead utilize the centralized PSD 36.

The supervisor application running on supervisor workstation 44 may use a graphical user interface (GUI)

that allows rate shopping and specifies print scheduling criteria. The GUI could support paperweight estimation for rate selection. For example, if 20 lbs. paper were used, the company would standardize on corresponding paper and envelopes, for this to function correctly.

Batch printing of envelopes requires that all envelopes are the same size. This is more of a printer restriction than a software design problem. Thus, a check ensures that all envelopes are the same before printing and if not, a notification and override is provided.

It would be very time consuming for a user to piece together all the envelopes and documents printed after a scheduled print of, for example, 500 documents sets and corresponding envelopes. Thus, a folding and sorting device 42 such as Winsorter™ (or PFE's new product the Mail Printer) may be used as an output device in conjunction with printer 40 as more fully described below. A Privatizer™ product provided by Privatizer, Inc. could also be used. Thus, this is the first time a complete solution including collating, folding, inserting, addressing, presorting and franking (also known as metering) are all available from a single integrated system. This provides a major advantage to businesses in terms of savings of time and labor. Further, by meeting the requirements of the postal service to obtain discounted rates, additional savings, and cost recovery (which pays for the investment in the system) are available.

The supervisor application can create a package of material that allows the client application to create letters with different pre-printed material. The user of the client application may click the appropriate check

boxes from the package of pre-printed material to insert into an envelope, including a personal document. The mailroom loads the Mail Printer's different stations (or bins) with pre-printed material from that package. The Mail Printer then inserts the material from the stations (or bins) specified by the client pre-selected package using the best sort rate provided by the mail application and attaches the IBIP postal indicia to the envelope.

This type of system can also be used to provide an advantage to a business by making available automatic customized responses to requests from customers for a particular piece of literature or a number of such pieces, such as product brochures, which are to be placed in an envelope, which is to be mailed to a customer. A customer interface 43, which may be a connection from the Internet (or may be a workstation with a GUI operated by a customer service representative talking to customers or potential customers on the telephone) may provide input to the system to specify which pieces of literature are to be mailed.

Fig. 3 illustrates the major functional components of the software associated with server 28. The central component is a coordination manager 45, which acts as a central control for a variety of software functions as discussed below. A client supervisor 46 acts as an interface between server 28 and the user workstations 24A, 24B...24N. A launcher 48 is a program that permits new functionality to be introduced to the system even when it is operating, by performing a series of legacy and archiving operations. Launcher 28 detects the presence of a new program 50, originating with a carrier service 52, such as a United States Postal Service (USPS)

program, more fully described below including, for example, an upgrade having a new service, and permits the new program 50 to be launched without interrupting the operation of the program that is running. For example, additions to the program are added, while deletions are archived.

A user profile options program 54 manages the users and the type of access they have to the system, as well as options for use of the system. For example, priority levels may be set so that when postal indicia are being generated by the system, the printing of certain indicia and the mailing of the corresponding pieces of mail are delayed until a number corresponding to a particular price break can be generated and presorted on one particular day. As another example, certain users may have a higher priority, with the generation of indicia and mailings of more limited quantities, even when there is no price break, occurring immediately.

Users at workstation 24A, 24B...24N can enter addresses for mail recipients into the system. An interface 56 is associated with an address standardization or "address cleansing" system such as, for example, a United States Postal Service Address Matching System (AMS) engine 58, of a type well known in the art. AMS engine 58 serves to standardize addresses entered by a user into a standard well known format preferred by the postal service which is a necessary but not sufficient condition required to receive certain postal discounts.

Addresses that are standardized by AMS engine 58 are provided to an address book manager 60, which manages a centralized address book database 62. If an address is already in database 62, there is no need to generate a

second record. If it is not already stored therein, it is added to database 62 as a new additional record.

A charge back accounting program 64 may be provided to manage a charge back accounting database 66. Users can be assigned to a specific category of use, such as marketing, recruiting, etc. A particular user can be in more than one category. Categories may be in an arbitrary number of multiple levels, and may be nested in, for example, 256 different levels. The categories themselves can contain any number of fields. Mark up tables may be used. A budget may be enforced for each user or each category by charge back accounting. If this option is used, the user of the client application for a specific department is denied service if the budget limit has been reached. Alternatively, the client and the coordination manager program are notified with an alert, if the budget has been exceeded. The account may be locked out. Thus, the present system efficiently and effectively solves a longstanding problem; it provides the ability to easily charge back funds expended.

Budgeting may also be time based enforceable, e.g., quarterly, monthly, yearly, July 5, 2001. For example, every quarter, the engineering department is allotted an additional \$500. The supervisor can create the charge back accounting accounts that require data validation from the client application. In other words, the user of the client application must fill out all the required fields before printing. Form printing may be included in the supervisor application. Ideally, this application would include importing from any data source such as, for example, e-mail, Outlook, text files, etc., and applications such as ACT™ and Goldmine™. Exporting of

data may be done in formats such as, for example, Excel, Access, bitmap, binary proprietary formats, or text files. Archiving and retrieval operations as well as search capabilities are available.

Carrier server 52 provides a program, which implements the rules for various carriers. For example, if the carrier is the United States Postal Service, a program is provided which sets up appropriate printing of postal indicia, but also takes into account postal rates, weight of pieces, and service requested, in order to determine the proper amount of postage. Server 52 provides updated programs from a program storage 68, which may include new services, or a simple change in postal rates from a rate storage 70.

A logger program 72 logs key system events, such as log-on and log-off by particular users, the printing of particular batches of indicia, etc. Logged events are stored in a logged events database 74.

A variety of reports may be printed by using a form generator program 76. The forms themselves and the reports may be stored in a forms database 80.

Fig. 4 illustrates yet another variation of the system arrangements of Figs. 1, 1A and 2. In Fig. 4 there is no centralized PSD and there is no centralized printer. Instead there are only local PSD's 36A..36N and local printer 40A..40N. However, the system of Fig. 4 may use a centralized address management system such as the USPS address matching system mentioned above (58 of Fig. 3) for address cleansing, a centralized address book database (62 of Fig. 3) and centralized charge back accounting (64 and 66 of Fig. 3).

Referring to Fig. 5, an embodiment of the invention is illustrated wherein, as in Fig. 4, each workstation 24A to 24N has its own local PSD 36A...36N and its own local printer 40A...40N. The system of Fig. 5 may use a centralized address matching system (58 of Fig. 3), but in general will not use a centralized address database or centralized charge back accounting.

Fig. 6 illustrates yet another embodiment of the invention which is similar in some respects to that of Fig. 2. A centralized PSD and a centralized printer 40 are available. Using the software arrangement of Fig. 3, centralized batch printing used, for example, for United States Postal Service presort discounts are available as a necessary but not sufficient condition to obtain the discounts. Centralized address cleansing, a centralized address database and centralized charge back accounting is also available. Local printing is made available with local printers 40A...40N.

The system of Fig. 6 differs from that of Fig. 2 in that instead of local PSD's, each workstation 24A...24N is provided with a local key lock device in the form of a dongle 83. The dongle 83 may be software based, or hardware based, and may be utilized to grant access only for authorized users, options, or areas in which a license to generate indicia is valid. The dongles may be configured to allow local information-based indicia program (IBIP) printing.

Fig. 7 illustrates an embodiment of the invention, which is particularly suited for use on the Internet. A system 84 provides the appropriate centrally located facilities to service, by way of the Internet 86, a multiplicity of users represented by a first company 88 and a second

company 90. The first company has workstation 24A...24N, corrected respectively to local printer 40A...40N, with the workstations being commanded by a LAN 22. The second company has only a workstation 24 and a single local printer 41.

System 84 may be owned and operated by a service provider in the business of providing centralized services to users for a fee. System 84 may include a provider LAN 92 for connecting together a telemetering system or TMS and an IBIP server 96. Server 96 may have associated therewith a plurality of security devices 98A...98N. Each security device 98 is a cryptographic processing engine which is a variation of the PSD discussed above, and may use public key - private key encryption techniques.

Security devices 98A...98N provide cryptographic or digital signatures and certificates, which certify their authenticity. Security devices 98A...98N securely store the private keys. These devices also may be configured to certify the authenticity of a PSD (not shown in Fig. 7) which serves as a source of funds. Each security device also has an internal real time clock, which time stamps all transactions.

Referring to Fig. 8, the software arrangement for operation of a system in accordance with Fig. 7 is shown. The user workstations have an arrangement 100 which may be based on a web browser 102 such as, for example, Internet Explorer™ or other commercially available web browser. A web page editor 104 using, for example, DHTML/XML is provided to allow editing and customization of Internet delivered pages for purposes of printing, for example, IBIP postal indicia. Arrangement 100 includes an address book 106 and a carrier control component 108,

coupled to a rate component 110. There is also a printing component 112 which may be, for example, a PDF417 printing template, although other formats such as Datamatrix™, Aztech™, Spectraseal®, by the Escher Group, LP may be used. There may also be a store 114 for encrypted user information, as well as an advanced print control 116.

System 84 (Fig. 7) may use software arrangement 120, which is coupled by the Internet 86 using Intranet/Internet protocols. An internet information server/site server 123 may be used for transmitting web pages and other functions that are not critical. A secure socket layer is used to provide a means to communicate with remote users on a secure, authenticated communications channel. Software arrangement 120 interacts with software arrangement 100 in a transaction based manner.

A remote coordination manager 124, associated with a secure socket layer 122 is used to provide a connection to a transaction processor 126 (see below, and Fig. 9).

Transactions are handled by a main transaction server or transaction processor 126. Processor 126 handles routines such as adding funds 128 for particular users and storing the information in a particular database 130. Transaction processor 126 also has the function of controlling the revocation of accounts at 132 and switching keys at 134 on a routine basis at predetermined intervals to assure security.

Transaction processor 126 is used to implant a business layer 136. Layer 136 includes an indicia generating software component 138, a funds management component 140,

a credit card processing component 142 and a report generator 144.

Business layer 136 is coupled to a data layer 146. Data layer 146 includes a user database 148, a telemetering system database 150, and an accounting services database 152. Due to the importance of the data contained in data layer 146, and the need to be certain there is absolutely no loss of data, data layer 146 may be implemented by a separate server using level 5 RAID arrays (with an uninterruptible backup power supply) which include redundant storage devices and permits "hot" replacement of storage devices which have failed, to assure uninterrupted access to the data.

An administrator application 154 permits control of system 84 by the service provider that maintains the system. Application 154 handles such functions as maintaining user ID's, passwords, logging, etc.

The arrangement of Fig. 7, including system 84 and the software of Fig. 8 provide certain unique advantages. First companies that log on to the system do not have to maintain complex systems of their own. Their data are safely stored off site. Second, the system of Fig. 7 and Fig. 8, being implemented mainly by software is completely scaleable, enabling the service provider to increase capacity in an orderly manner as demand dictates. In addition, system 84 can be distributed among several locations. Thus, in cases of interruption of communication, signals may be rerouted to allow users to access their data and to continue to use the system.

Referring to Fig. 9, the system concepts of Figs. 1, 1A, 2 and 3 on the one hand, and those of Figs. 7 and 8 on

the other hand, are combined. As an example, a company needing services may have offices in different geographic locations. The functions performed by software arrangement 100 of Fig. 8 may be divided between a client layer 160 and a local services layer 162. The client layer is deployed in user workstations at the various geographic locations, and communicates via a network 166, which may be an internal network or the Internet, using, for example, a network protocol. The client layer includes various client applications 168, 170, etc. These may be used to implement the printing of indicia using, for example, a PDF417 format or template supplied by a component 172. A supervisor application 174 controls client layer 160.

Local services layer 162 includes a coordination manager 176 having a function similar to that of coordination manager 45 of Fig. 3 and a carrier server 178 such as a United States Postal Service server, having a function similar to that of server 52 of Fig. 3. A rate component 182 for the particular carrier may also be provided, similar in function to rate storage 70 of Fig. 3. Server 178 may be associated with one or more PSD's 180A to 180N.

Server 162 may also have a database, which includes data concerning feature authorization 184 for various users, a centralized database 186, and a charge back accounting database 188. A report generator 190 may also be included.

The embodiment of Fig. 9 allows a user of client layer 160 at a user workstation to make a choice between processing by the local services layer 162 or by a remote system 84A operated by a service provider, in a manner

similar to system 84 as described above with respect to Fig. 7 and Fig. 8. A secure socket layer 122A is used for communication between a remote coordination manager 124A (in system 84A) and a secure authenticated communications channel 192. Thus, the user and the company obtain the advantages of local or in house control, as well as remote archiving and safety provided by system 84A, as outlined above with respect to Fig. 7. Further, system 84A may be configured to provide a virtual PSD based on software operating on a system in a secure environment, rather than a hardware based PSD.

While the invention has been described principally with respect to systems for the generation of postal indicia by printing, it will be understood that the invention is not limited to the disclosed embodiments. Any indicia representing value may be generated. For example, tickets to entertainment events, gift certificates, or other items having a value and for which funds have been paid may also be generated by the systems and methods disclosed herein. These items, as well as the postal indicia, may be produced with secure digital signatures, as discussed in the United States patent application and corresponding International patent application mentioned above. Further, it is not necessary that those items be printed. Digital data representing these items may be generated and sent to customers by facsimile, modem or e-mail, or infrared or RF link, to be printed at a later time, or used in some other manner.

While the system is shown as implemented on a LAN, it may also be implemented on a WAN with multiple PSD's, each PSD printing postal indicia for one or ore zip codes.

CLAIMS

What is claimed is:

1. A system for managing generation of indicia representing payments for a plurality of users, said system comprising:

a secure source of funds,

an output station,

at least one user workstation, each user workstation including user software for enabling the user to provide input data corresponding to indicia to be generated,

a centralized software system for interacting with said user software, said secure source of funds, and said output station, and

a network for carrying information between said at least one workstation and said centralized software system, and between said centralized software system, said secure source of funds and said output station.

2. The system of claim 1, further comprising for at least one of said workstations a local secure source of funds and a local output station for locally generating indicia.

3. The system of claim 2, wherein said local output station includes at least one of a printer, a fax, a modem, an e-mail generator, and an infrared or RF link.

4. The system of claim 2, wherein said indicia are postal indicia.

5. The system of claim 2, wherein said local secure source of funds is a PSD.

6. The system of claim 1, wherein said local output station includes at least one of a printer, a fax, a modem, an e-mail generator and an infrared or RF link.

7. The system of claim 1, wherein said indicia are postal indicia.

8. The system of claim 1, wherein said local secure source of funds is a PSD.

9. The system of claim 1, further comprising for at least one of said workstations a local dongle and a local output station for locally generating indicia.

10. The system of claim 9 wherein said dongle is a hardware device.

11. The system of claim 9 wherein said dongle is a software device.

12. The system of claim 1, wherein said output station is a centralized output station.

13. The system of claim 1, wherein said secure source of funds is a centralized source.

14. The system of claim 1, further comprising a charge back accounting system for charging back funds expended, to a user of the system.

15. The system of claim 1, wherein said indicia are postal indicia, further comprising apparatus for assembly

of postal packages, and wherein said output station includes a printer for printing said postal indicia for inclusion with said packages.

16. A system comprising:

a customer interface for receiving orders for at least one of a plurality of items to be sent to a customer;

an assembly apparatus for assembly of the items ordered by the customer into a package to be sent to the customer by a carrier; and

a franking apparatus for franking the items to be sent to the customer;

said customer interface, said assembly apparatus and said franking apparatus all being contained in a single integrated system.

17. The system of claim 16 wherein said customer interface connects to customers via the Internet.

18. The system of claim 16, further comprising a computer with a graphical user interface, for entering customer orders.

19. A method for managing generation of indicia representing payments for a plurality of users, said method comprising:

entering data into at least one user workstation, said data corresponding to indicia to be generated;

accessing a secure source of funds;

utilizing a centralized software system for interacting with said secure source of funds;

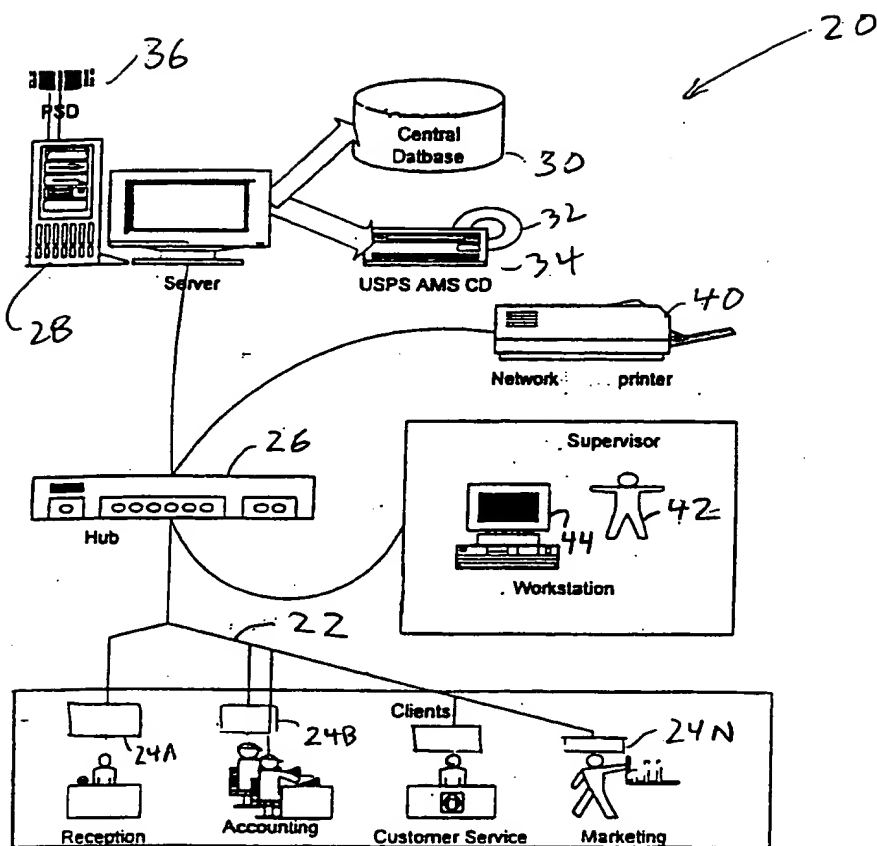
sending data through a network for carrying information between said at least one workstation, said centralized software system, and said secure source of funds; and

providing data needed to generate said indicia to an output station.

20. The method of claim 19, further comprising generating one of a printout, a fax, a modem signal or an e-mail at said output station.

1/10

Fig. 1



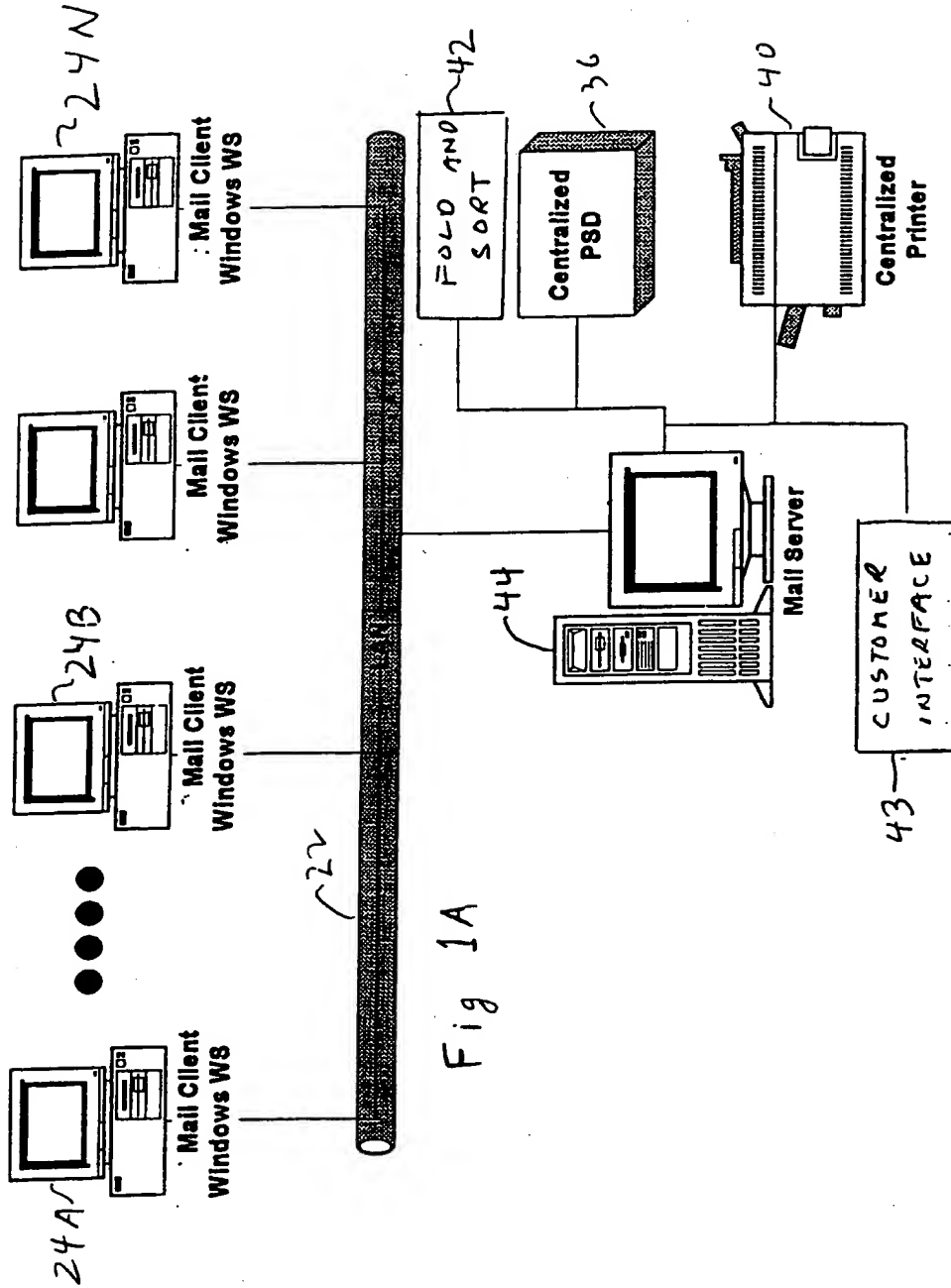


Fig 1A

3/10

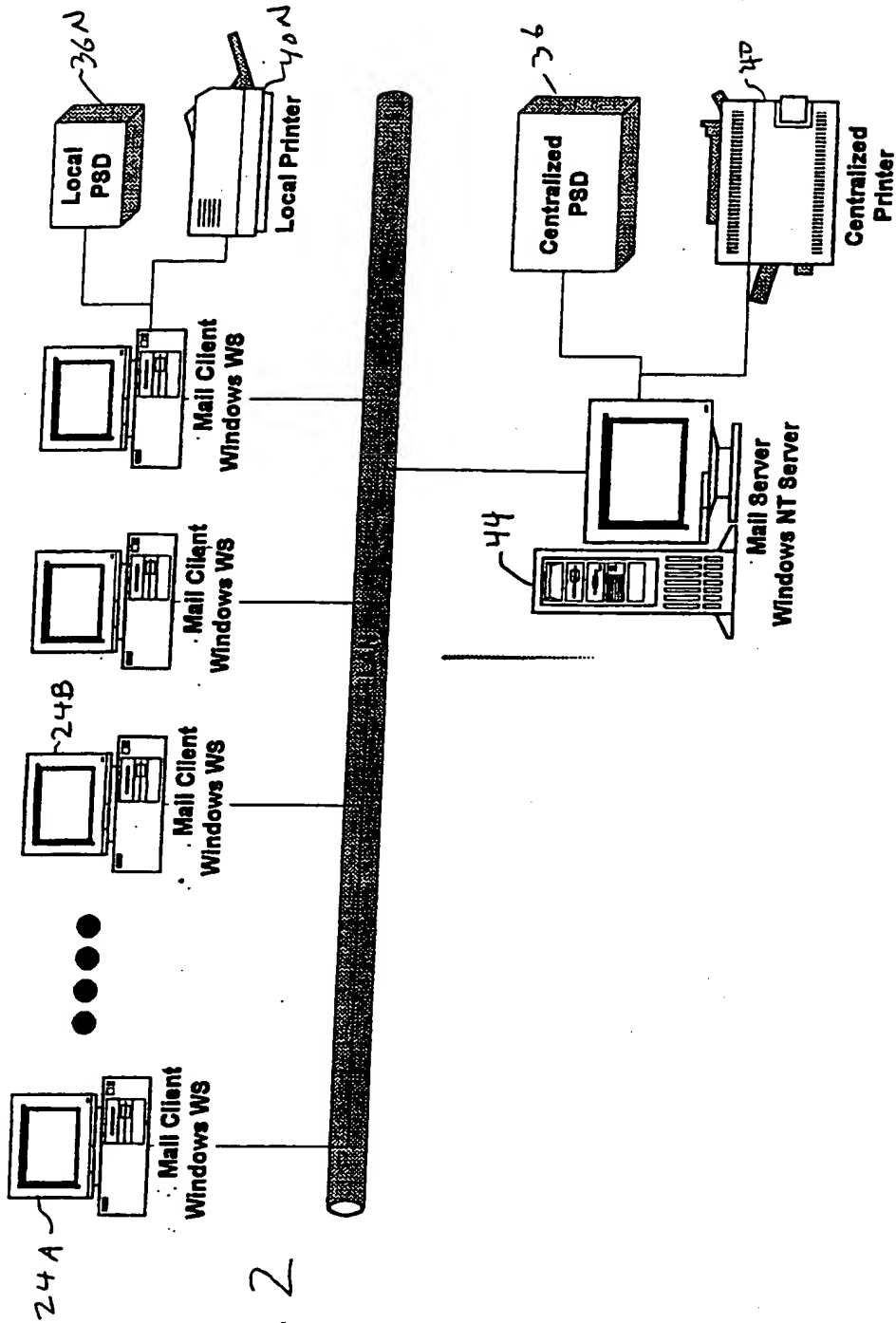


Fig. 2

4/10

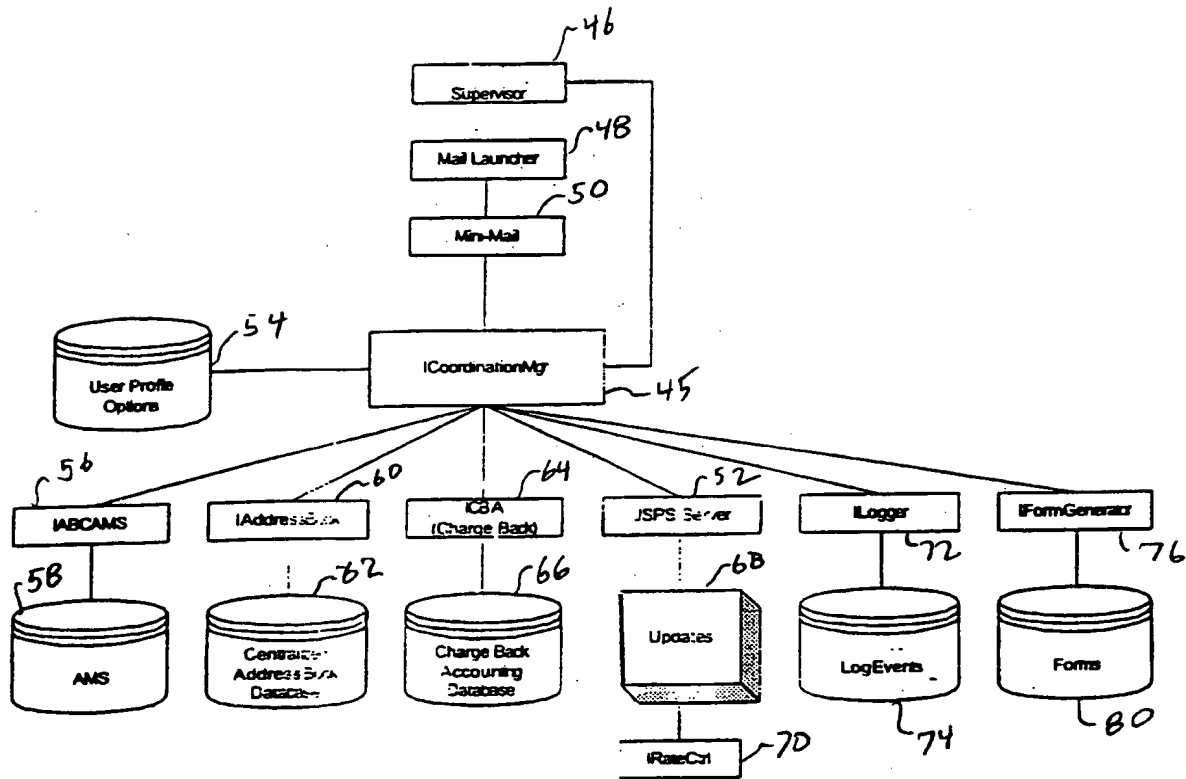
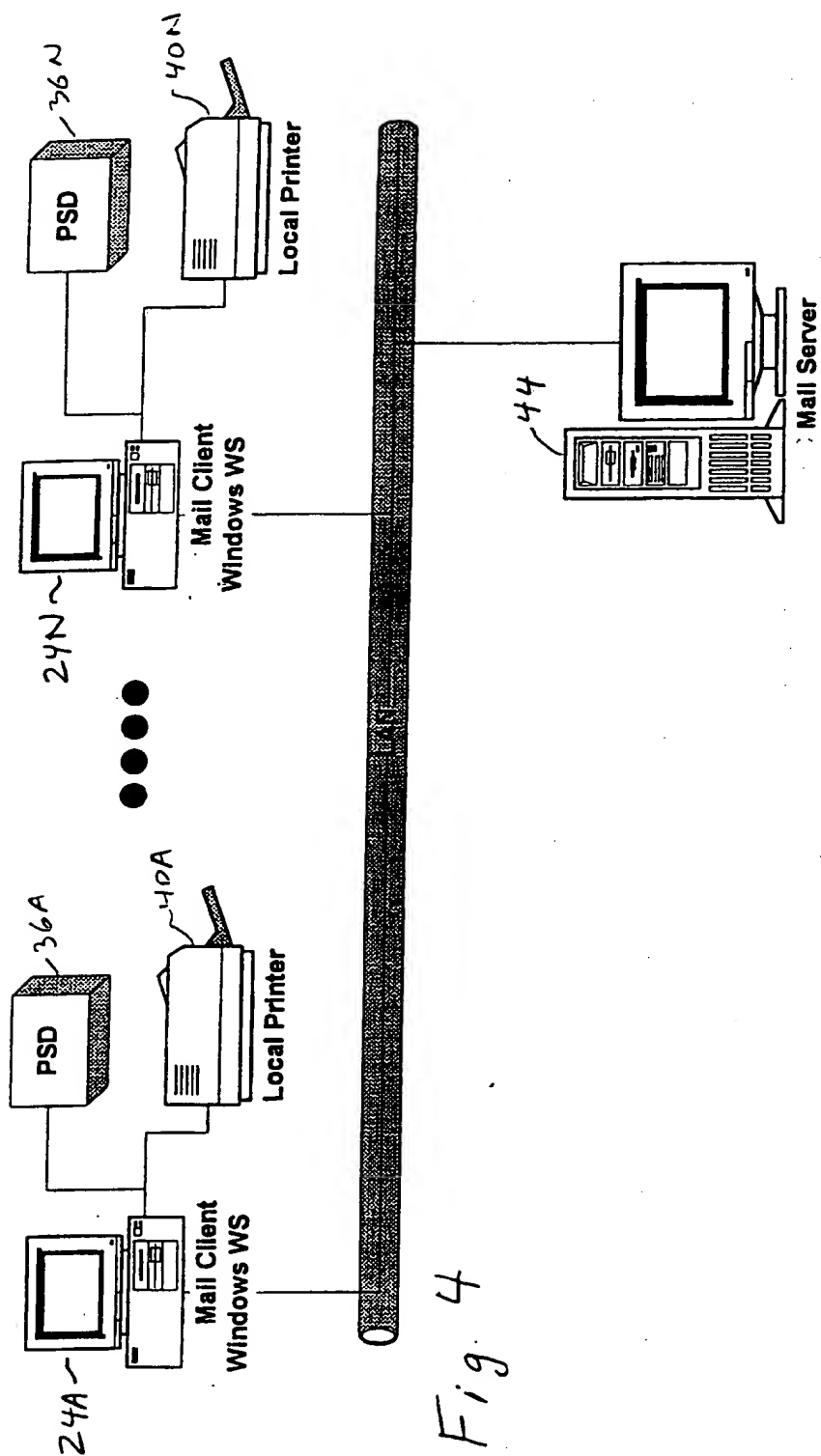
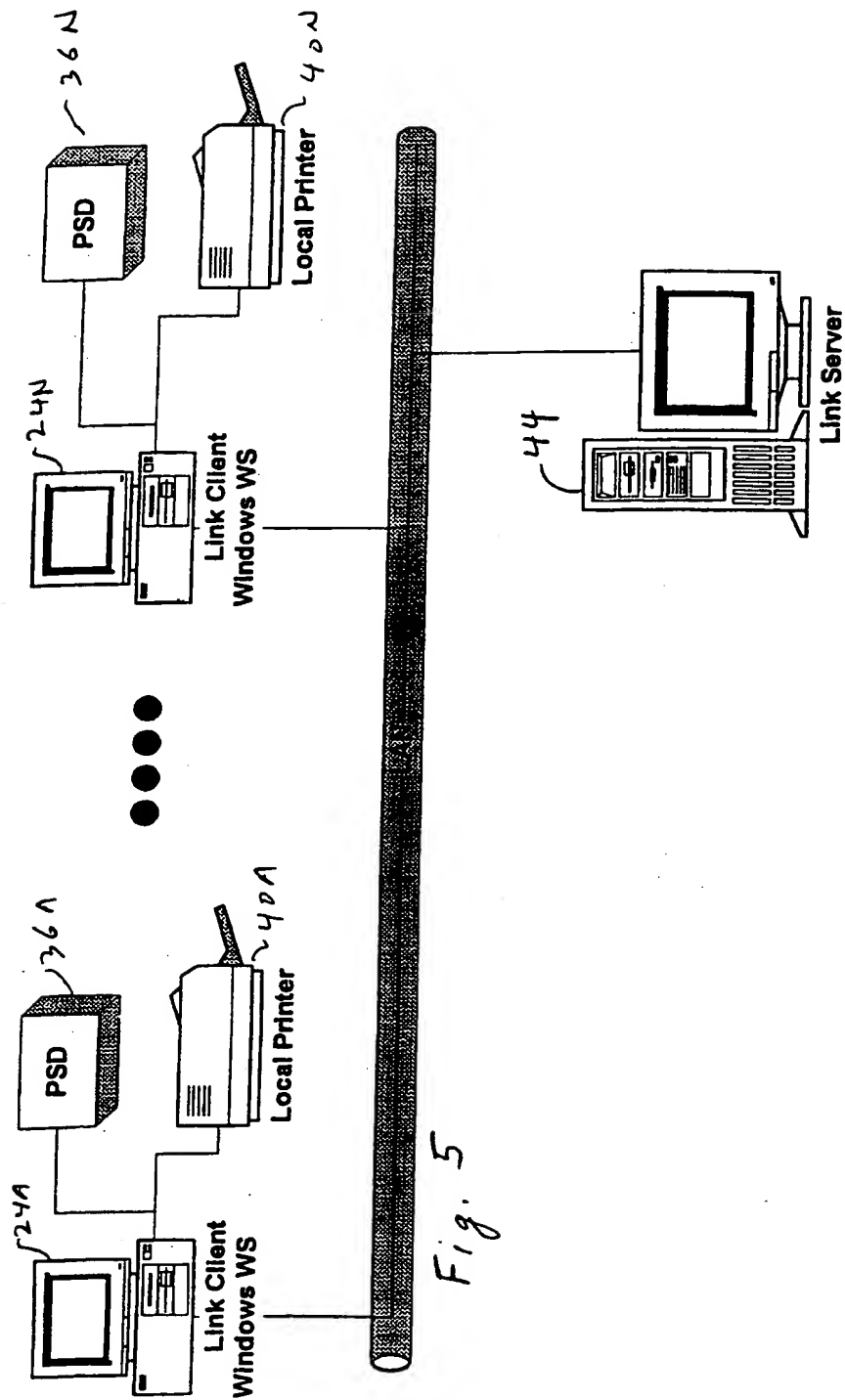


Fig. 3

5/10



6/10



7/10

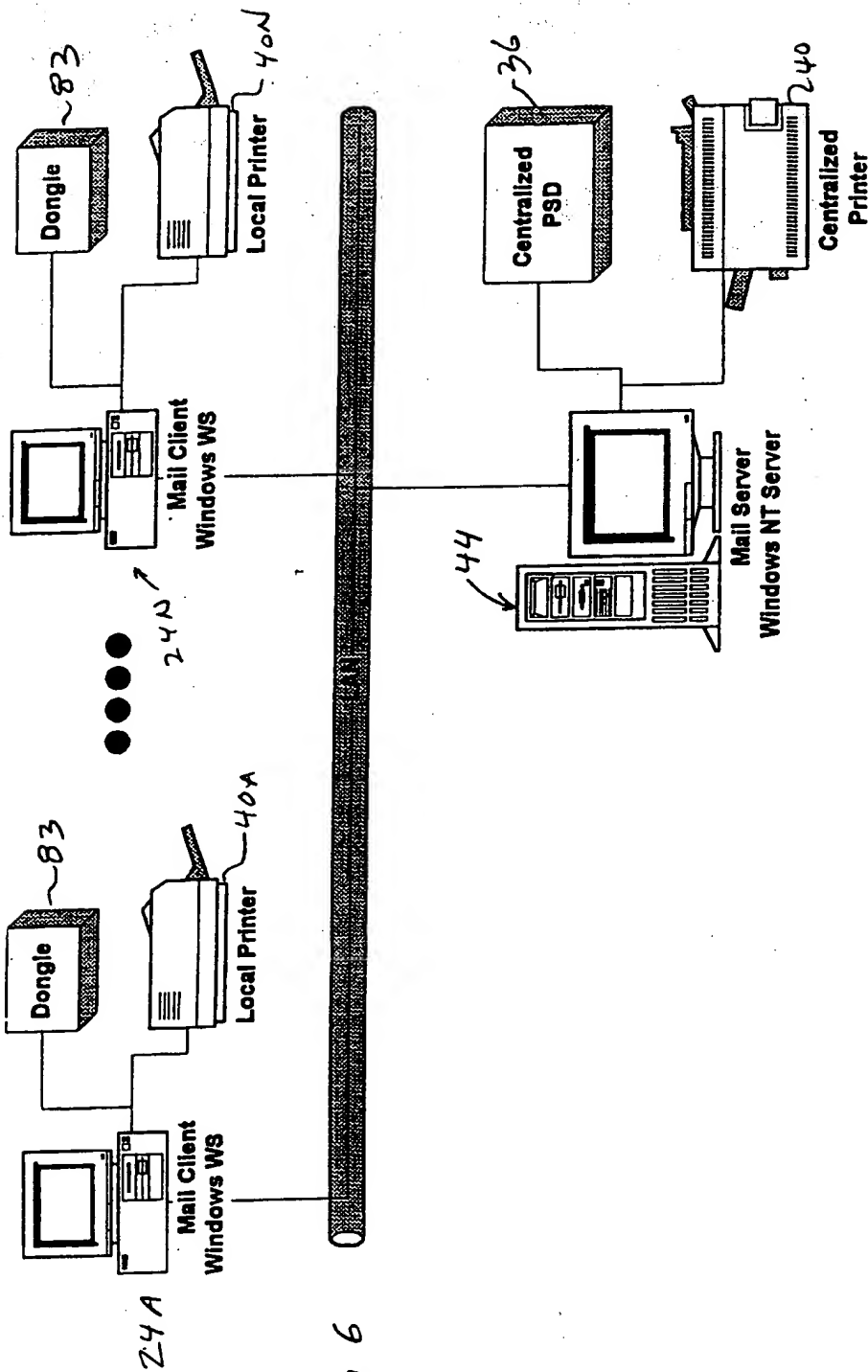
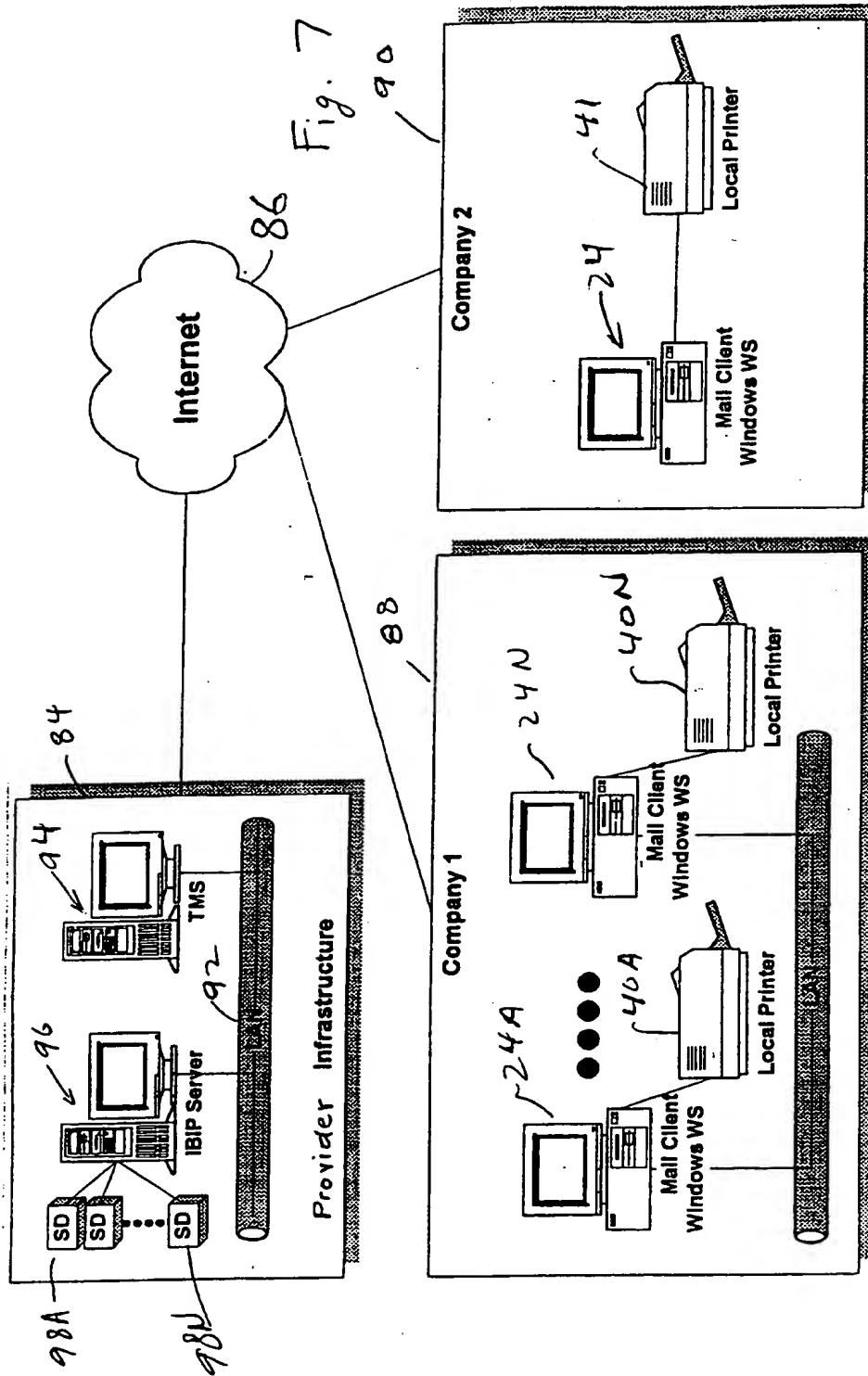


Fig 6

8/10



9/10

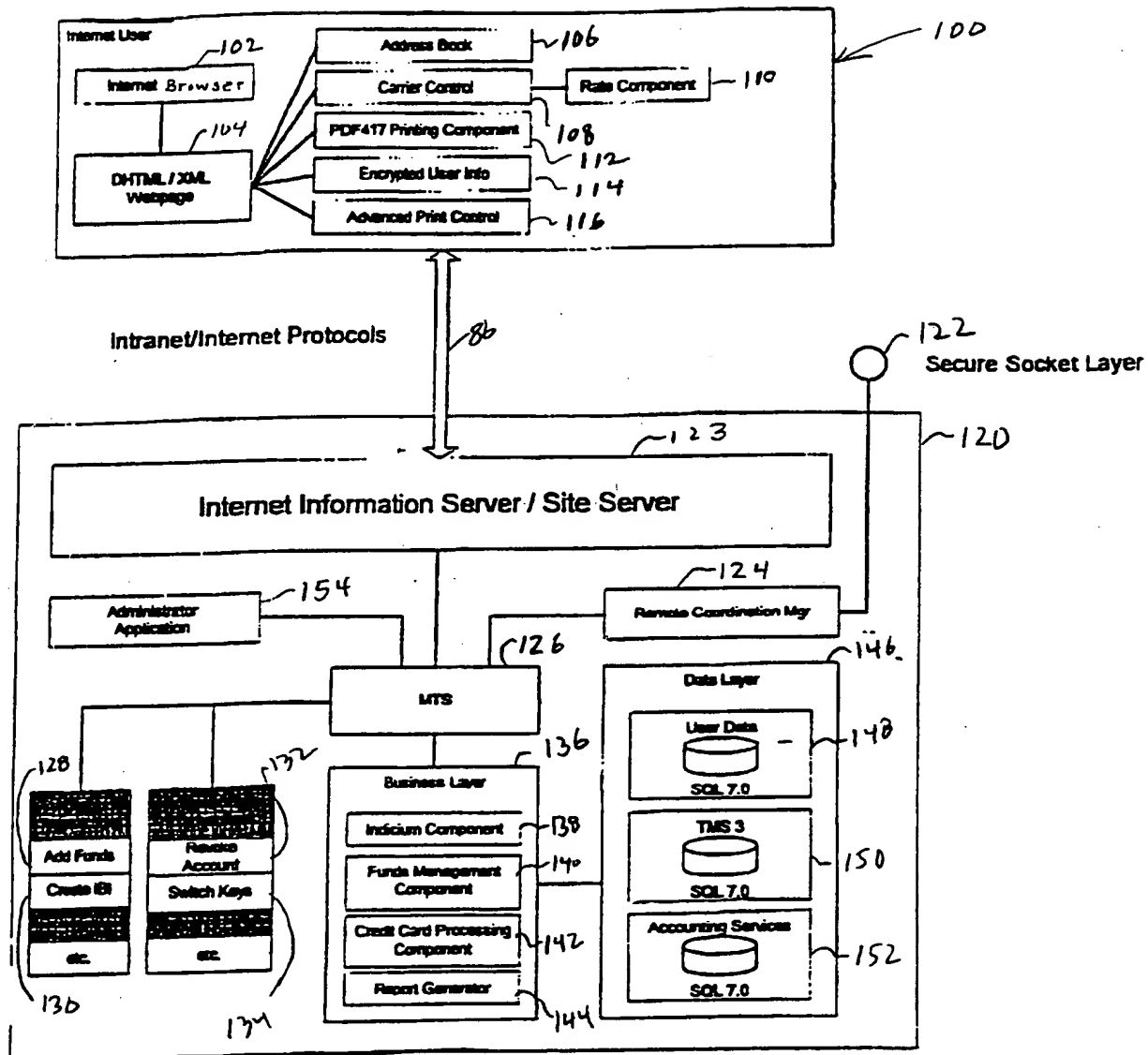


Fig. 8

10/10

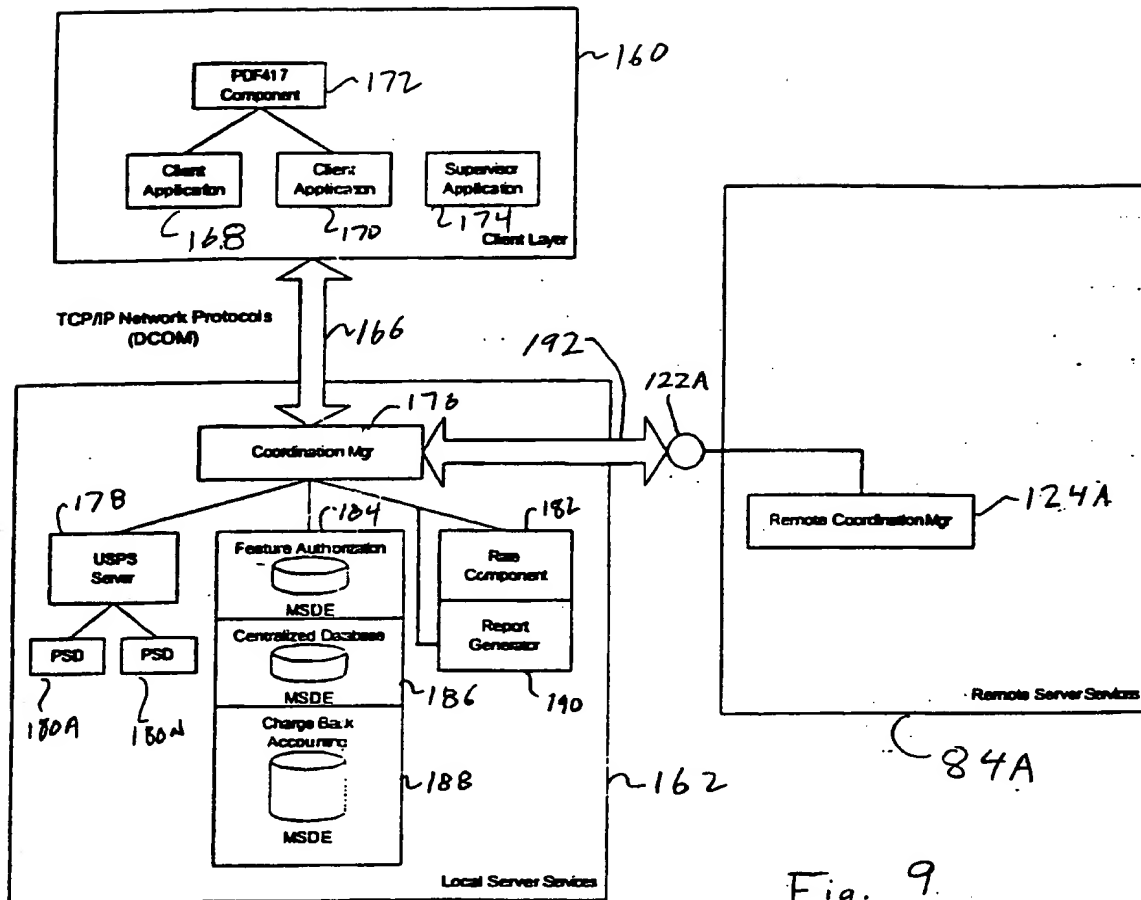


Fig. 9

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.